

## SILICATE GLASS FOR UPCONVERSION FLUORESCENCE

### ABSTRACT OF THE DISCLOSURE

A thulium doped silicate glass composition which contains SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, and La<sub>2</sub>O<sub>3</sub> emits visible and UV light when excited by infrared light. The glass  
5 composition may also contain GeO<sub>2</sub> and Er<sub>2</sub>O<sub>3</sub>. When excited by infrared light of about 1060 nm, the glass emits visible light at fluorescent transitions of the Tm<sup>3+</sup> ions with major broad features at 365, 455, 472, 651, and 791 nm.